In this paper, three frames of spatial reference, intrinsic, relative and absolute, are discussed and described for Ambae. The expression, 'intrinsic frame of reference' refers to the specification of a location or direction in relation to an inherent feature of an object, such as its front, back or side. In contrast, a 'relative frame of reference' is dependent on the location of the speaker, and the location being referred to is specified relative to the speaker's location. This type of reference frame is thus changeable according to a change in the speaker's location rather than being fixed according to inherent features of an object. An 'absolute frame of reference' refers to locations according to fixed reference points in our environment, such as north, towards the sea or down-river.[4] This paper describes in detail the absolute/deictic system of spatial reference which is the system most commonly used in the language to talk about spatial relations, and also briefly describes the set of relational location nouns which operate using an intrinsic frame of reference. It will then be possible to illustrate how an absolute frame of reference can be used to describe a spatial relation which in some languages may be referred to using a relative frame of reference, in order to talk about such locations as 'behind a tree'.

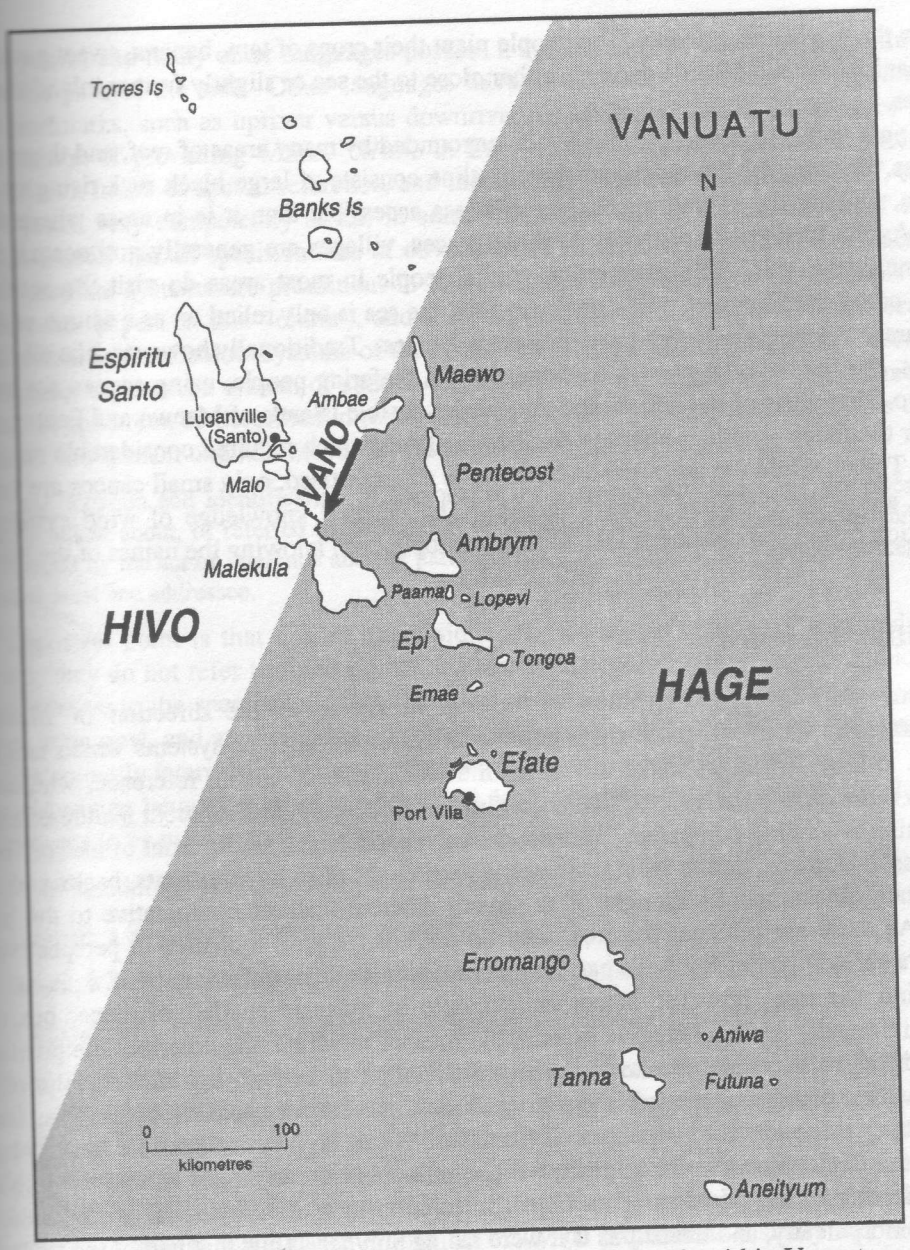
In Ambae there is a class of 'directionals' which involve the interaction between an absolute and a deictic system. The absolute system is based on a division of the environment that uses both the vertical axis and the landward – seaward axis, although it also uses other divisions. Onto this absolute system is mapped a partially deictic system, such that each of the oppositions of the absolute system can be marked according to a three-way distinction relative to the participants of the speech act.

The language also employs a set of relational location nouns which are used to express intrinsic relations between objects. The intrinsic system is used to specify the location of objects, mostly in terms of small-scale relations. The absolute/deictic system, on the other hand, is used to specify both the location of objects and direction of movement. It operates on both large-scale and small-scale space. The intrinsic system can also be used in combination with the absolute system on the small-scale space to give more detailed specifications of location.

2 The linguistic setting

The island of Ambae is located in the north of the Vanuatu chain of islands, east of the large island of Espiritu Santo (see Map 1). It is formed by the cone of a dormant volcano, which peaks at 1496m in the centre of the island. As the island has a relatively small area, being less than 40km in length, and approximately 15km at its widest point, a considerable elevation is thus reached over a relatively short distance. The result is an island which rises steeply from the sea, and continues rising steadily to the peak of the volcano. Apart from small areas at the north-eastern and south-western ends of the island, the topology of almost

[4] More detailed discussion and definition of the terms 'intrinsic', 'relative' and 'absolute', is given in §3. The reader is also referred to Palmer's paper in this volume and to Levinson (1996) for a more extensive discussion of different frames of spatial reference.



Map 1: Directionals used for movement to other islands within Vanuatu

the entire island consists of steep hillsides which are densely vegetated, and fall away at times into creek beds formed by ancient lava flow. Ambae receives considerable rainfall, and many of these creeks are rendered impassable after heavy rain. Few of these creeks offer a regular water supply however, as they tend to stop flowing shortly after the rain has ceased.

As a result of this fairly inhospitable environment, areas of habitation on the island are generally restricted to those flatter north-eastern and south-western areas, and a narrow coastal strip rounding the island. In only a few areas are there villages located more than 2km inland of the coast. Most of the rugged interior of the island is uninhabited, even fallow for planting gardens—in fact, most people rarely venture far inland and few have travelled the difficult

path to the top of the volcano. The people plant their crops of taro, banana, sweet potato, yam and manioc in steep hillside gardens, either close to the sea or slightly further inland than their villages.

Being a volcanic island, Ambae is not surrounded by many areas of reef, and there are few beaches. Rather, for the most part the coastline consists of large black rock rising up out of the sea, making the shoreline considerably less accessible than it is in areas where there is reef. As the land rises so steeply in these places, villages are generally not located directly adjacent to the sea. This means that, while people in most areas do visit the seashore to collect crabs, shellfish and occasionally to fish, the sea is only relied on as a source of food in those areas where there is reef providing easy catches. Traditionally however, like all Oceanic peoples, the people of Ambae were very much a seafaring people, using canoes not only for travel to other parts of the island, and the nearby, visible islands of Maewo and Pentecost, but also for the much lengthier journeys to distant islands which required considerable navigation skills. Today, while the art of canoe-building is still practised, only small canoes are used for fishing along the coastline close to home. The detailed knowledge of wind systems and navigation by the stars has been lost, with few people even knowing the names of the stars.

3 Spatial reference

When referring to the location of objects in space, or the direction of movement incorporated in an event, there are a number of different types of systems which languages employ. Many languages make use of an intrinsic frame of spatial reference, whereby the location of an object can be specified according to its relation to an inherent feature of an item with which it is being compared. This covers such expressions as, 'in front of me' or 'behind the house'. Humans, due to their asymmetry are thought of as having fronts, backs and sides, and certain objects can be thought of as having inherent features comparative to the human form. As these are inherent features, they do not change with a change in perspective; the front of a car will be the front of a car, no matter which angle one views it from.

'Behind the tree' however is not an example of intrinsic spatial reference, but rather relative reference. Using a relative system, the manner in which one describes the position of an object depends on the speaker's position in relation to it, and thus this description will change with a change in speaker's position. Trees, at least for speakers of English, and for that matter Ambae, do not have inherent fronts and backs, so it is not possible to refer to 'the back of the tree'. However in English, we *can* talk about the location 'behind the tree', and when referring to the position of an object in relation to a tree, the speaker views the tree anthropomorphically, and treats it as if it were facing him/her. Thus that part of the tree which is 'facing' the speaker is considered to be its front, and the part which is hidden is the back. It is thus possible to say, 'in front of/behind the tree', but the area of space which this refers to will change according to the viewer's perspective. In Ambae it is not possible to say 'behind the tree', as in this language one can only talk about a location 'in front of/behind something' for objects which have intrinsic fronts and backs. Thus a different frame of reference must obviously be used in order to express the relation which in English we would describe as 'behind the tree'. In Ambae, an absolute system is used in these situations, as there is no relative system operating in the language.

Many languages possess an absolute system, based on fixed, salient reference points in the speaker's environment. Our cardinal system, distinguishing north, south, east and west is an

absolute system, and many other languages possess a system such as this, which is ultimately based on the path of the sun. Other languages have an absolute system which is based on physical landmarks, such as upriver versus downriver, or landward versus seaward, or based on the direction of prevailing winds. While in English our cardinal system is in fact quite rarely used as a frame of spatial reference, and indeed many speakers, such as myself, cannot use this system very competently at all, in some languages this is the main type of spatial system used, such that all specifications of direction and location are stated using an absolute system. Absolute systems are prominent in Austronesian languages (see for example Senft 1997 and other papers in this volume), and it is the distinction of landward versus seaward which is salient in the absolute systems of the island-residing, seafaring peoples of Oceania.

All languages possess a system of spatial deixis, whereby the location of objects and their movement in space can be described in relation to the location of the speech act and its central participants, the speaker and addressee. Lyons (1977:637) has defined deixis as:

> ... the location and identification of persons, objects, events, processes and activities being talked about, or referred to, in relation to the spatiotemporal context created and sustained by the act of utterance and the participation in it, typically, of a single speaker and at least one addressee.

The important point is that deictic expressions are tied to the context of each individual speech act; they do not refer to fixed points or items in space, but rather identify the location of things relative to the speech situation. In terms of deixis, the deictic centre of any speech act is me, here, now, and any information which requires knowledge of the current context in order to be correctly interpreted by the people I am speaking to, is deictic information.

In Austronesian languages there is a tendency for a combination of intrinsic, absolute and deictic systems to be used as in the following:

- New Caledonian languages (Ozanne-Rivierre 1997);
- Longgu, a Southeast Solomonic language (Hill 1997);
- Muna, a Western Malayo–Polynesian language of Sulawesi (Van Den Berg 1997) and
- Taba, a South Halmahera language of Eastern Indonesia (Bowden 1997).

They do not tend to have a relative system.[5] Thus while there are terms for left and right, front and back, above and under, in most Austronesian languages, these terms tend to only be used intrinsically. In fact, with respect to left and right, the use of these terms is often restricted to talking about the left and right sides of a person's body. While it is possible to say that someone is sitting on a person's left or right, in many Austronesian languages this is not the way that such a spatial relationship would normally be expressed—usually this would be expressed in absolute terms. For example, X is sitting on the uphill side of Y. Further, in most Austronesian languages left and right can never be used relatively to state the location of one object in relation to another. Thus one is not able to say, 'The child is to the left/right of the tree'. Nor, when giving directions can you direct someone to turn to the left or right. The absolute/deictic system tends to be used in all of these situations.

[5] Or rather, they do not have what I have defined here as a relative system. There is some variation in the terminology used to speak about spatial reference (See e.g. Levinson 1996).

4 Directionals

In Ambae there is a set of spatial terms which involves interaction between an absolute and a deictic system. Grammatically, this spatial system is encoded by a set of forms which can function as demonstratives, absolute location nouns, and directional verbs. These forms constitute a separate word class which I refer to as 'directionals'.

Referring to Table 1, note that there are nine terms distinguished. The primary distinction reflects the absolute system, in which direction on the vertical axis is specified, distinguishing motion across, on the level (*vano*), from motion up (*hage*), and motion down (*hivo*). This parameter also reflects a division of the landward – seaward axis, such that motion up equates with motion in a landward direction, motion down equates with motion in a seaward direction, and motion along equates with motion parallel to the coastline. In fact the distinctions are more complex than that, as I will describe in the following sections, but I shall first describe the deictic oppositions.

Table 1: The directionals

	across/traverse	up/landward	down/seaward
away (from deictic centre)	*vano*	*hage*	*hivo*
towards deictic centre	*vanai*	*hamai*	*himei*
towards addressee, past/future deictic centre	*vanatu*	*hagatu*	*hivatu*

5 Spatial relationship to participants in the speech act

As can be seen from Table 1, the primary distinction made by the directionals is an absolute distinction, and these forms are marked to specify direction relative to the participants in the speech act. The unmarked forms indicate location or motion in a direction away from the deictic centre, and we can observe the correspondence between these forms and both the forms marked for motion towards the deictic

where the speaker also wants to be. If a simple unmarked form were to be used in this context, it would not be entirely clear whether the speaker was intending to follow the addressee, and in fact it would usually indicate that s/he would not.

(13) *Go=<u>hagatu</u>!*
2SGS=go.up:DIR
'You go up (first)! (i.e. lead)'

5.4 Comparison of deictic oppositions

In order to ensure that the difference in use of the three contrastive sets of forms is clear, I take an example where all three forms are possible in the same frame, to illustrate the different meanings which would then be understood. Sentence (14) describes a situation where a group of people travelled down to a place where a mourning feast in honour of a dead person was being held. If the verb used in this example is the unmarked *hivo*, then this implies that the feast was held at a place which is located further down from the place where the speech participants are at the time of the speech act, and/or down from the place that the people came from. It is also understood that neither the speaker nor the addressee were at the feast at the time when all the people came, and nor is it their place of usual residence. It is, however, possible that either of the speech participants also went to the event, although they would have gone either at the same time as or after the people referred to. Alternatively, if *himei* is the verb used, the context which relates to the sentence is one in which either the event took place at the same place as the speech act, or at a different place, but one which is at a similar level to the place where the speakers are now. In either of these cases the place would be situated down relative to the place where the actors in the event came from. Lastly, there are a few possibilities for the context which could surround the sentence if the form used was *hivatu*. The event would have taken place at a location other than one which is at the centre of the speech act, and it would have been a place where the speaker, the addressee or both were at the time of the event. Typically it would mean that it was one or the other's place of residence, but it could as well mean simply that they were also present at the event, and were there before all the other people came, as for example if they had been helping to prepare for the event. This demonstrates an interesting contrast. If either of the speech participants attended the event, either *hivo* or *hivatu* could be used. If *hivo* was used it would imply that they, like the other people, were also going to the event; whereas if *hivatu* were used then the implication is that they were already present at the location when the other people arrived.

(14) *Sinobu* *ra=u* *<u>hivo</u>/* *<u>himei</u>/* *<u>hivatu</u>* *lo* *bongi*
many.people 3NSGS=TEL go.down go.down:to.sp go.down:DIR LOC death.feast
'Lots of people went down to the mourning feast.'

6 Specification of vertical/landward – seaward axis

Moving now to the specification of the absolute system, one can see from Table 2 that the situation is much more complicated than simply specifying motion uphill versus downhill versus along on a level plane. In different contexts, different oppositions are relevant.

Table 2: Specification of the vertical/landward – seaward axis

vano	*hage*	*hivo*
across	up	down
parallel to land	up (in air)	down (to ground or in sea)
parallel to shore (on land)	inland	seaward
parallel to shore (at sea)	landward	

(17) *Ga=u* *vano* *tavalu* *wai.*
1NSG.EXS=TEL go side creek
'We went to the other side of the creek.'

While *vano* is the form marked for direction across or level, it is also in fact the form which is used when direction is not known. Thus, it is used when asking where someone has gone to (as in example (18)) or come from (19).

(18) *Bui* *u* *va*[9] *logo?*
Mum TEL go where
'Where has Mum gone?'

(19) *Ne=vanai* *logo?*
2NSGS=go:to.sp where
'Where have you (all) come from?'

As may be expected, the directional verbs *hage* and *hivo* can also be used to express motion up and down on the vertical plane as opposed to motion along on the surface. Thus in example (20) a movement to a place up on top of something is expressed using *hage*, as is

(24) *Mo=vo na hivo na ga-garu lolo tahi.*
REAL=say 3SG go.down 3SG REDUP-swim in sea
'He wanted to go down and swim in the sea.'

(25) *Da=hivo lo tahi da=si-siu!*
1NSG.INS=go.down LOC sea 1NSG.INS=REDUP-fish

Hate, da=ni mas hage aute huri na qeta.
no 1NSG.INS=IRR must go.up up.in.bush PURP ACC taro
'Let's go down to the sea and fish!'
'No, we must go up to (the gardens in) the bush to get some taro.'

While motion away from the sea is associated with *hage* and towards the sea with *hivo*, movement along the coastline is associated with *vano* as in example (26).

(26) *Ra=ni vano ra=ni huri lolo one.*
3NSGS=IRR go 3NSGS=IRR follow LOC beach
'They will go along the beach.'

In most situations on Ambae, downhill and towards the sea will be the same direction, and thus it may not be possible to state in a given context what direction specifically *hivo* is referring to, as the direction is one and the same. There are also very few flat places on Ambae, so it is difficult to test whether or not there really is an opposition relating to direction with respect to the sea, or if in fact this is coincidental. However, when one walks with an Ambae speaker through the few streets of Luganville, which is a small town on the coast of Santo island, we can see the opposition of inland versus seawards clearly demonstrated. The central part of town is flat, and turning through the streets one must go *hage* 'up' a street if it is away from the sea, *hivo* 'down' towards the sea, and *vano* 'across' if it is parallel to the shore. Likewise, a group of people playing football on a level playing field will say, 'pass the ball here', *hamai* or *himei*, meaning in an inland or seaward direction towards the speaker. As the area is flat, obviously a distinction on the vertical axis is not relevant, but the speakers are aware of the position of the sea and use this as a reference point.

6.3 Towards shore/out to sea

The specification of direction with respect to the sea is extended to describing movement between the land and sea. When at sea, movement towards the land is equated with movement inland or upwards and is thus *hage*, whereas movement further out to sea is equated with movement towards the sea and a downwards motion, and is thus described as *hivo*. Therefore, if one is on a ship in the harbour and another ship is heading towards your ship from further out to sea, then you would say, *Sip mo hamai* 'The ship is coming (up)'. Likewise if you were standing on the shore and the ship was coming in, the same statement would apply. So when a boat travels into the harbour, it travels *hage*, as in example (27), as does the wind blowing ashore from out at sea (28). If, however, a ship was coming from a position closer to the shore towards the ship which you were on, then you must say, *Sip mo himei* 'The ship is coming (down)'. This direction of motion is illustrated by (29), which describes swimming further away from the land, out to sea.

Langi mo vanai lo westen pat.
wind REAL go:to.sp LOC western part
'The wind comes from the west.' (Stated at Lolovoli in the south-east.)

(65) *U vei gide=ru lo nago-i tangaloi sao.*
TEL make 1NSG=DL LOC front-CONST people many
'She humiliated[13] the two of us in front of many people.'

(66) *... mo vano mo tau=e lo vava-i goari-i dadai.*
REAL go REAL put=3SGO LOC under-CONST root-CONST blood tree

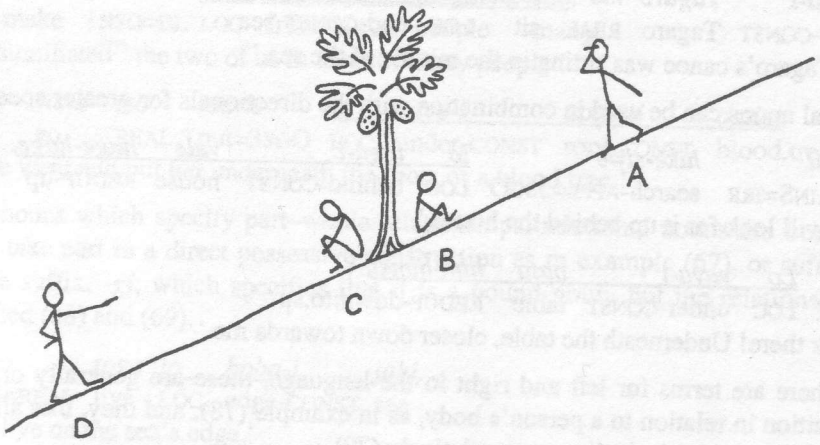
(75) *... aka-i Tagaro mo toga lo duvi-i tehi.*
canoe-CONST Tagaro REAL sit LOC end-CONST sea
'... Tagaro's canoe was sitting in the middle of the sea.'

Relational nouns can be used in combination with the directionals for greater specificity.

(76) *Da=ni hike-si=e lo tagu-i vale hage-hage.*
1NSG.INS=IRR search-APPL=3SGO LOC behind-CONST house REDUP-up
'We will look for it up behind the house.'

(77) *Ge! Lo vava-i bata him-himei.*
there! LOC under-CONST table REDUP-down:to.sp
'Look there! Underneath the table, closer down towards me.'

While there are terms for left and right in the language, these are generally only used to refer to position in relation to a person's body, as in example (78), and they, like all relational


A
B
C
D

speaker's change in perspective. An object on the inland side of a tree will always be on the inland side—no matter where the speaker views it from. What can change, however, is the location in deictic terms. Thus referring once again to Figure 1, the location of B is *hage* relative to the tree no matter whether it is seen from the location of A, D or any other location. However, from A's perspective B is closer than the tree and therefore it is *hamhamai*, while from D's perspective B is further away than the tree and therefore it is *hagehage*. Thus, this absolute/deictic system requires that both the absolute position of an object and the speaker's location be taken into account.

9 Conclusion

There are many different types of spatial systems which operate in languages and spatial reference systems are an area of language where it is often not possible to make a direct translation equivalent between two different languages. This is illustrated by the case in point. Ambae uses two different types of spatial reference systems, an absolute/deictic system and an intrinsic system. There is no system operating which enables speakers to use the intrinsic system relatively. However, the absolute/deictic system can be used in place of a relative system in situations which in other languages may require a relative system to be used. The location is the same, it is merely seen and described in a different way; the location is not behind the tree, but is, for example, on the seaward or landward side of it. The absolute/deictic system operating in Ambae is based on salient features of the landscape, distinguishing uphill versus downhill or an inland direction versus a seaward direction. These environmental features can be referred to when talking about the location or direction of movement of any object in space.

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